

000919 D4

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

CORRECTED VERSION

(19) World Intellectual Property Organization  
International Bureau



INTERNATIONAL PATENT COOPERATION TREATY (PCT)

(43) International Publication Date  
9 August 2001 (09.08.2001)

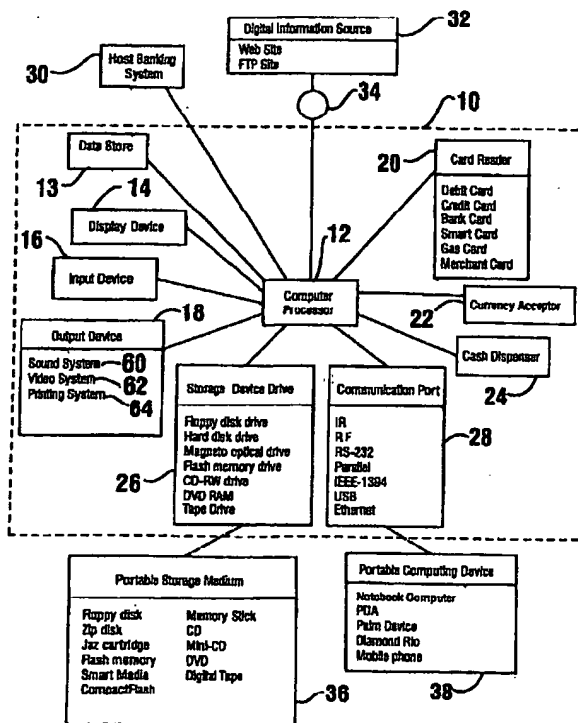
PCT

(10) International Publication Number  
WO 01/057617 A2

- (31) International Patent Classification: G06F
- (21) International Application Number: PCT/US01/03597
- (22) International Filing Date: 2 February 2001 (02.02.2001)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
60/180,490 5 February 2000 (05.02.2000) US  
60/250,269 30 November 2000 (30.11.2000) US
- (71) Applicant: DIEBOLD, INCORPORATED [US/US];  
5995 Mayfair Road, North Canton, OH 44720 (US).
- (72) Inventors: BLACKSON, Dale; 5056 Paddington Down Street, Canton, OH 44718 (US). CHURCH, James, R.; 741 Governor's Circle, Kent, OH 44240 (US). SMITH, Mark, D.; 1910 Hunting Valley N.W., North Canton, OH 44720 (US). RAMACHANDRAN, Natarajan; 2424 Lyndon Drive, Uniontown, OH 44685 (US).
- (74) Agent: JOCKE, Ralph; 231 South Broadway, Medina, OH 44256 (US).
- (81) Designated States (national): BR, CA, CN, IN, MX, PL, RI, ZA.
- (84) Designated States (regional): European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR).

[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR DISPENSING DIGITAL INFORMATION FROM AN AUTOMATED TRANSACTION MACHINE



(57) Abstract: An automated teller machine (ATM) (10) includes an input device (16), a card reader (20), a cash dispenser (24), and an output device (18). The ATM is operative to read account information from a card with the card reader and validate a user PIN input through the input device. The ATM is also operative to dispense cash with the cash dispenser and dispense digital content with the output device responsive to user input selections. The ATM is further operative to charge a user fee to an account associated with the card for the dispense of cash and digital content. Digital content dispensed by the ATM may include sound recordings such as MP3 files, video files, books, and other digital data. To dispense sound files the output device may include a sound system that is operative to output audio that corresponds to the dispensed sound recording files. The sound files may be acquired by the ATM from a digital information source on the Internet or other network. Licensing fees associated with the dispense of the digital files may be transferred to a source or licensing entity associated with the digital content.

WO 01/057617 A2

**Published:**

— *without international search report and to be republished  
upon receipt of that report*

**(15) Information about Correction:**

see PCT Gazette No. 44/2002 of 31 October 2002, Sec-  
tion II

**(48) Date of publication of this corrected version:**

31 October 2002

*For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.*

## SYSTEM AND METHOD FOR DISPENSING DIGITAL INFORMATION FROM AN AUTOMATED TRANSACTION MACHINE

### TECHNICAL FIELD

5 This invention relates to the dispensing of digital information from an automated transaction machine. Specifically this invention relates to a system and method for downloading and dispensing digital information such as sound recording files from an automated transaction machine.

### BACKGROUND ART

10 Automated transaction machines are known in the prior art. For purposes of this disclosure an automated transaction machine shall include any device which is capable of carrying out transactions including transfers of value. A common type of automated transaction machine is an automated teller machine (ATM). ATMs are typically operative to perform banking transactions such as dispensing cash, transferring value between banking  
15 accounts, or accepting deposits. Many ATMs are located in retail or service facilities such as stores, gas stations, restaurants and bars. The owners of these facilities often generate income from the ATMs through service fees on transactions performed with the ATM. For example if a user withdraws an amount of cash from the ATM, the user may be charged a small transaction  
20 fee.

If the ATM has only marginal use, the income generated may not be sufficient to justify the expense of maintaining the ATM. For example maintenance and service costs may consume a large portion of the monthly  
income generated by an ATM which has low transaction volumes.  
25 Consequently to enable ATMs to generate additional income there exists a need for an ATM to perform additional income producing activities that do not significantly increase the expense of maintaining the ATM.

Methods for the digital recording of sound are also known in the prior art. Such digital recordings are typically distributed on compact disks (CD)  
30 for playback on a CD player. As sound systems have become a standard feature of any new personal computers, digital sound recordings are also being

distributed as computer files. Common formats for sound computer files include WAV (Waveform Audio File Format ) and MP3 (MPEG-1 Audio Layer-3). To play such files, computer systems can employ a sound file player application such as the Windows Media Player. Sound file player applications  
5 read the digital sound files and output corresponding music through the sound card and speakers of the computer system.

Digital sound recordings may also be copied directly from an audio CD through a process called "ripping." Essentially ripping refers to the reading of the digital information that represents audio on the CD and saving the  
10 information in a computer readable sound file. Different formats of sound files have different characteristics. For example WAV files are typically uncompressed digital versions of sampled sound. MP3 files are typically created by compressing a sound sequence into a very small file (about one-twelfth the size of a corresponding WAV file). However, MP3 files are  
15 "lossy" meaning that the compression algorithms remove digital information that most people cannot hear or cannot distinguish from other sounds. If a high sampling rate is used to generate the MP3 files, the sound quality is only slightly inferior to that of the original audio file. However, the advantage of the smaller size of the MP3 files is significant. These advantages include the  
20 ability to store more hours of sound recordings per amount of space in physical storage mediums such as, for example, hard disks, RAM, and flash memory cards. Also, the smaller size of MP3 files enables them to be downloaded much faster through a network such as the Internet.

Numerous web sites on the Internet offer digital sound files such as  
25 MP3 files for downloading to a personal computer. Also as a result of the popularity of digital sound files, portable computer systems have been developed such as the Diamond RIO which are specifically designed to load and play sound recording files.

Unfortunately, the technology associated with creating MP3 files from  
30 a CD and downloading MP3 files from web sites has resulted in a significant

amount of music piracy and lost revenues for artists and music recording companies. Anyone with a home PC can generate an unlimited number of copies of digital sound files. By placing such pirated files on an Internet web site, unlimited distribution of pirated sound files is possible.

5           To deter copyright infringement and unrestricted piracy of digital sound recordings, the music industry is promoting an alternative file format for storing digital recordings called SDMI (Secure Digital Music Initiative). The SDMI specification for sound files offers similar compression characteristics as the MP3 file format; however, SDMI is designed to have built in copyright protection features which limit the playback and duplication of the files. In  
10           addition Microsoft has developed an alternative specification for compressing and copyright protecting sound files called Windows Media.

          Because MP3 files are already widely accepted as the de facto standard, it may be very difficult for new file formats to replace MP3. The popularity of  
15           MP3 files coupled with unlimited sound file piracy may significantly decrease the revenue that recording labels and artists generate from the sale of music and other forms of audio. Consequently, there exists a need for a system of distributing MP3 files that enables the copyright holder to receive licensing fees for each distribution of an MP3 file.

20           Distribution of sound recordings from the Internet makes it much easier for an individual artist to reach a mass audience for their work without a recording label. As a result the variety of music that is available over the Internet is exploding. Many of the titles can be downloaded without a fee. Unfortunately much of the music that has no fee is low quality, amateurish,  
25           and not very desirable. If the artist is relatively unknown, it is very difficult to get users to download music for a fee. This is because most individuals are hesitant to pay for downloaded MP3 files before being familiar with the artist.

          If the music is given away on a no-fee basis or even a low-fee preview basis, it may be difficult to generate any income from the music. Once the  
30           MP3 version of the music is downloaded, the MP3 file can be played, copied,

and distributed an unlimited number of times without generating income for the artist. Consequently there exists a need for a system that enables individuals to test out songs for a small fee, but does not enable the users to copy or distribute the sound files.

5           To take advantage of the benefits of playing sound recording files rather than CDs or cassettes, a user must have a PC. Although the cost of a personal computer has dramatically decreased over the last two decades, computers are still significantly more expensive than a CD player. Portable sound file players such as the Diamond RIO are operative to play music  
10 independently from a PC; however they still must be connected to a PC at some point to upload a new set of MP3 files. Consequently there exists a need for a new system of distributing sound files that does not require the user to have a computer.

15           The current methods for the delivery of forms of audio, visual, print and other media may also have drawbacks. Consequently, there exists a need for a better way of delivering the content of such media.

#### DISCLOSURE OF INVENTION

20           It is an object of an exemplary embodiment of the present invention to provide an automated transaction machine that is operative to dispense digital information.

          It is a further object of an exemplary embodiment of the present invention to provide an automated transaction machine that is operative to dispense digital information to a portable storage medium.

25           It is a further object of an exemplary embodiment of the present invention to provide an automated transaction machine that is operative to dispense digital information to a portable computing system.

          It is a further object of an exemplary embodiment of the present invention to provide an automated transaction machine that is operative to dispense digital information in exchange for a user fee.

30           It is a further object of an exemplary embodiment of the present invention to provide an automated transaction machine that is operative to output digital information to an output device in exchange for a user fee.

It is a further object of an exemplary embodiment of the present invention to provide an automated transaction machine that is operative to distribute user fee income generated from the dispense of digital information among a plurality of entities.

5       It is a further object of an exemplary embodiment of the present invention to provide an automated transaction machine that is operative to download digital information from a digital information source located on a network.

10       It is a further object of an exemplary embodiment of the present invention to provide an automated transaction machine that is operative to dispense digital sound recordings.

It is a further object of an exemplary embodiment of the present invention to provide an automated transaction machine that is operative to play digital sound recordings through a sound system.

15       It is a further object of an exemplary embodiment of the present invention to provide an automated transaction machine that is operative to dispense digital sound recordings onto a portable storage medium.

20       It is a further object of an exemplary embodiment of the present invention to provide an automated transaction machine that is operative to dispense digital sound recordings to a portable digital sound file player.

It is a further object of an exemplary embodiment of the present invention to provide an automated transaction machine that is operative to charge an account of a user in exchange for the playing of digital sound recordings.

25       It is a further object of an exemplary embodiment of the present invention to provide an automated transaction machine that is operative to provide a selection of digital sound recordings to play when the user performs a banking or other transaction at the machine.

30       It is a further object of an exemplary embodiment of the present invention to provide an automated transaction machine that is operative to

offer a selection of digital sound recordings to play that are downloaded from a network such as the Internet.

Further objects of exemplary embodiments of the present invention will be made apparent in the following Best Modes for Carrying Out Invention and the appended claims.

5 The foregoing objects are accomplished in one exemplary embodiment of the invention by an ATM that is operative to dispense digital information which is also referred to herein as digital content. In the exemplary embodiment the digital information includes digital sound recording files that  
10 may be output through an output device such as a sound system in operative connection with the ATM. However in alternative embodiments, the digital information may include other types of information that may be digitally stored and transported over a network. Other examples of digital information include digital representations of images, books, software, audiovisual works,  
15 movies, TV shows, magazines, newspapers, games, compilations, and databases.

The ATM is in operative connection with storage read/write devices such as a floppy disk drive, smart card drive, flash memory drive, or any other device that is operative to read and write information to a portable storage  
20 medium. In the exemplary embodiment the ATM is operative to save digital information such as digital sound recording files to the portable medium.

Alternative embodiments of the ATM may include a portable computing device communication port that is operative to communicate with a portable computing device. When a portable computing device, such as a  
25 laptop computer, hand-held computer, or sound file player is placed in operative connection with the communication port, the ATM is operative to send digital information such as digital sound recording files to the portable computing device. Examples of communication ports that are operative for use with embodiments of the present invention include a Universal Serial Bus  
30 (USB) port, parallel port, RS-232 Serial Port, Infrared (IR) Port, Radio



Frequency (RF) port, or any other type of physical or wireless communication port.

5 The ATM is operatively programmed to accept a fee from a user in exchange for outputting either digital information or saving digital information to a portable storage medium or portable computing device. For ATMs that include a card reader and are in operative connection with a host banking system, the ATM may be operative to charge the fee to an account associated with a credit card, debit card, or smart card for example. For ATMs that include a currency accepting device, the ATM may be operative to accept  
10 currency in exchange for outputting or saving digital information.

In an exemplary embodiment of the present invention, the ATM is in operative connection with a private network or public network such as the Internet. The ATM is programmed to enable a user of the ATM to view and select digital information that is downloaded across the network. For example  
15 the ATM is operative to display visual outputs corresponding to a plurality of sound recording files such as MP3 files, that can be executed to reproduce individual musical performances such as songs. The ATM is further operative to download one or more of these sound files in exchange for a fee and to either play the song through a sound system or send the song to a portable  
20 storage medium or computing device.

In an alternative form of the present invention, the ATM may be operative to periodically download a selection of digital information in response to programmed instructions to acquire one or more categories of digital information. By pre-downloading and storing digital information, the  
25 ATM does not need to be continually connected to a source of digital information. Also any delay caused by having to download individually selected information files across a network is eliminated because the files are stored locally in the ATM.

For example when the digital information corresponds to sound  
30 recording files, the ATM may be operative to periodically download sound

files that correspond to the most popular songs for the week or other time period. In another example if the digital information corresponds to digital books, the ATM may be operative to periodically download digital books that correspond to a fiction or nonfiction best seller list or ranking. In another  
5 example if the digital information corresponds to broadcast TV shows, the ATM may be operative to periodically download digital files that correspond to the TV shows that were broadcast over a certain time period. Of course in other embodiments other types of digital information may be delivered and stored in the machine for delivery to users, or downloaded at the time in  
10 response to the user's request.

In an exemplary embodiment of the present invention, the ATM may be operative to distribute the user fees for the dispense of digital information among a plurality of entities, including the owner of the ATM, the source of the digital information, and/or a licensing organization. This distribution may  
15 be performed for each user transaction or may be performed on a periodic basis. When the distribution is performed periodically, the ATM is operative to calculate an amount of value that corresponds to licensing fees for digital information that is downloaded or dispensed by the ATM during a time period. An amount of value equal to this calculated amount may then be transferred  
20 from an account associated with the ATM such as the operator thereof to the source(s) of the digital information and/or to licensing organizations.

When the digital information requires copy protection features, the ATM may be further operative to include or activate a copy protection feature responsive to the type of license being purchased by the user. For example, if  
25 the ATM dispenses SDMI or Windows Media sound recording files, the ATM may be operative to configure the files to limit where and how long the sound files can be played as well as whether duplication is allowed.

**BRIEF DESCRIPTION OF DRAWINGS**

Figure 1 is a schematic view representative of an exemplary embodiment of an automated transaction machine and system of the present invention that is operative to dispense digital information.

5        Figure 2 is a schematic view representative of an exemplary embodiment of an automated transaction machine and system of the present invention that is operative to dispense digital sound recordings.

Figure 3 is a schematic view representative of the distribution of transaction fees from digital information dispensed by an ATM.

10        **BEST MODES FOR CARRYING OUT INVENTION**

Referring now to the drawings and particularly to Figure 1, there is shown therein a schematic view of an automated transaction machine of an exemplary embodiment of the ATM 10 of the present invention. The ATM 10 includes at least one computer processor 12 that is operatively programmed to enable the ATM to perform at least one banking transaction such as the  
15        dispense of cash. The computer processor 12 is also operatively programmed to enable the ATM to dispense digital content which is alternatively referred to herein as digital information. To perform these functions the ATM further includes in operative connection with the computer processor 12, at least one  
20        data store 13, a display device 14, at least one input device 16, at least one output device 18, a card reader 20 which also serves as an input device, and a cash dispenser 24. The ATM 10 is further operative to communicate with at least one financial transaction processing computer which is operative to carry out financial transfers which in this example is host banking system 30. ATM  
25        10 also is enabled to communicate with at least one digital information source 32. In the exemplary embodiment of the present invention the ATM 10 is operative to download digital information from the digital information source 32 through a network 34 such as the Internet.

It should be understood that the ATM 10 and system are exemplary and in other embodiments automated transaction machines may include other or additional devices and may operate in other types of systems. For example, embodiments of the present invention may include in operative connection with the computer processor 12, a currency acceptor 22, a data store including a storage device drive 26, and a communication port 28 which serves as an output device. The storage device drive 26 serves as a local data store and enables the computer processor to dispense digital information to a portable storage medium 36. The communication port 28 enables the computer processor to cause the dispense of digital information to a portable computing device 38.

Figure 2 schematically shows an exemplary embodiment of the ATM 10 that is operative to dispense both cash and digital content comprising sound recordings such as music and songs. However, it is to be understood that the present invention also encompasses the dispensing of other types of digital information including digital representations of images, books, software, audiovisual works, movies, TV shows, magazines, newspapers, games, compilations, databases and other types of digital content that may be delivered in a digital format.

Exemplary ATM 10 includes a display device 14 such as a CRT monitor or LCD display. The display device is operative responsive to the processor to output user interface indicia 46. The user interface indicia may include instructional outputs for operating the ATM as well as content indicia which are representative of the portions of digital information that may be dispensed from the ATM for a fee. In some embodiments the content indicia may include listings of songs, movies, books or other portions of the digital content which a user may select to have delivered. Exemplary embodiments may also include graphical representations regarding the information, such as pictures of the artist or CD liner in the case of music files. Audio and/or

visual outputs may also be provided to identify, and in some cases enable the user to sample the available information.

Exemplary ATM 10 also includes at least one input device 16 such as a keypad and selection buttons. The input device(s) enable the user to enter operation inputs such as a personal information number (PIN) corresponding to an account, an amount of cash to withdraw, or a selection of a particular digital sound recording or other portion of the digital content to dispense. Although this described embodiment includes function keys and a keypad, alternative embodiments of the present invention may use other or additional types of input devices for entering information, such as a touch screen device, a speech recognition system, or a track ball.

ATM 10 also includes a cash dispenser 24 and a card reader 20. The card reader 20 is operative to read indicia corresponding to account information from a user's card. The card may be a bank card, credit card, debit card, gas card, merchant card, smart card, or other medium that is operative to store account data and/or other information which may be used to identify a user or their accounts. In other embodiments the ATM may include a biometric type reading device which may identify the user by a characteristic thereof. Such biometric reading devices may include for example a fingerprint reader, iris scanner, retina scanner, voice recognition device, facial recognition reader or other device. The exemplary ATM 10 is operative to dispense a selected amount of cash to the user from the cash dispenser 24, and to debit the account of the user through communication with a financial transaction computer such as a host banking system. The exemplary ATM 10 is also operative to debit user fees from the account for dispensing digital information from the ATM as well.

In alternative embodiments of the present invention, the ATM may also include at least one currency accepting device 22. For users who do not wish to use an account to pay for the dispense of digital information, the ATM is

operative to receive the user fees in the form of cash such as bills and/or coin, using the currency accepting device 22.

In the exemplary embodiment, the digital information dispensed by the ATM 10 includes digital sound recording files 44. Examples of digital sound recording files include MP3 files, WAV files, SDMI files, and Windows Media files. Typically each file corresponds to an individual music selection or song. However, sound files may correspond to any collection of sounds of any type and length. Other examples of sound recording files include compilations of songs such as are found on music CDs and spoken textual material corresponding to news articles, stories, speeches and books.

In the exemplary embodiment, the ATM 10 acquires sound files to dispense from at least one remote digital information source 32. The source 32 may include a web site or FTP site on the Internet, or sources in other public or private networks. The exemplary ATM 10 is operative to periodically download a plurality of sound files that match certain customizable programmed criteria. The ATM may also download corresponding graphics or video files associated with the sound files. These downloaded files are stored locally at the ATM in a local content data store 13 such as a hard drive. The ATM 10 is operative to display or output graphical, textual and/or audio content indicia representative of these sound files with the display device 14. A user of the ATM 10 may then provide one or more inputs to select and/or dispense one or more of these sound files.

The ATM may be programmably configured with different types of downloading criteria. For example, if the ATM is located in a dance club, the downloading criteria may be configured to have the ATM periodically download the sound files that correspond to the top 100 most popular dance songs for the month. If the ATM is located in a book store, the ATM may be configured to periodically download sound files representative of the best-selling fiction and nonfiction books for the month.

In the exemplary embodiment if the data store 13 does not have already stored therein the sound file that a user desires, the exemplary ATM is further operative to have the user enter a selection input corresponding to the desired sound file such as a title or the name of an artist or group. The ATM is then  
5       operative to query one or more remote content data stores for the requested sound file(s). A message is returned to the ATM which is operative to cause the processor to generate a listing of matching sound files which is displayed on the display device 14 of the ATM 10. In a response to one or more  
10       dispense inputs from the customer, and for a fee, the ATM 10 is then operative to download and dispense one or more of the matching sound files from an output device.

In embodiments of the invention in which a network connection such as an Internet connection is not available or is not always used, the ATM may be operative to acquire sound files from portable storage mediums such as  
15       CDs. Such sound files may then be copied or ripped from the CD and saved locally to the data store 13 in the machine.

The exemplary ATM may be operative to dispense digital information in a plurality of different ways depending on the type of digital information. For example the ATM described in connection with Figure 2 further includes  
20       an output device 18 that includes a sound system 60. The sound system 60 includes a sound signal amplifier 40 with a plurality of speakers 42. The ATM 10 is operative to output through the sound system 60, analog or digital signals that correspond to selected digital sound recording files. The signal amplifier  
25       40 is operative to output sound through the speakers 42 that corresponds to the sound file signals. Such an ATM may then function as a fee-based digital music player or jukebox. For restaurants, bars, and other facilities that offer music, the exemplary embodiment of the present invention offers the ability to generate user fees for both the dispensing of cash and the dispensing of audible music.

For other forms of digital information that is visual, such as text, documents, images or video for example, the ATM may be operative to output such digital content either through the display device 14 of the ATM 10 or through an output device 18 that includes a video system 62 or a printing system 64. A video system may include one or more monitors, TVs, speakers, LCD displays, or projection TV. The embodiments of the present invention may include multiple output devices for outputting multiple forms of digital information concurrently. A printing system 64 may include a monochrome or color printer capable of outputting documents and/or photo quality prints of images or other graphics.

If multiple sound files or other forms of digital information have been selected for output through the output device, the exemplary embodiment may be operative to sequentially output each song either in the order the digital information was selected, or in other orders, including alphabetical by title of song, artist, album, style, or in a random order.

Alternative embodiments of the present invention may also dispense digital information such as sound files, to other storage mediums. For example the ATM 10 may include a storage device drive 26 such as a CD-R or CD-RW drive which is operative to accept a portable storage medium 36 such as a write-once or rewriteable CD. For a fee the ATM may be programmed to dispense the sound file by writing a copy of the sound file on a user supplied CD. Alternatively, the ATM may include a supply of blank CDs or other media, and may copy the file onto the media and deliver it to the user. Examples of other types of storage device drives that are operative for use with embodiments of the present invention may include portable hard drive readers such as an Iomega Jaz® drive; magneto optical drives such as an Iomega Zip® drive; flash memory drives for writing to flash memory devices such as CompactFlash and Sony Memory Stick®; DVD-R, DVD-RW, and DVD-RAM drives, Mini-CD drives, and digital tape drives.



Alternative embodiments of the present invention may dispense digital information such as sound files, through an output device which includes a communication port 18 directly to a portable computing device. Examples of suitable communication ports 18 include a Universal Serial Bus (USB) port, a serial RS-232 port, parallel port, an infrared (IR) port, a radio frequency (RF) port such as Bluetooth, an IEEE-1394 port, or a network port such as a wired or wireless Ethernet connection. When a portable computing device such as a Diamond Rio is connected to the port 18, the ATM may be operative for a fee to download MP3 sound files to the RIO MP3 player. Examples of other types of portable computing devices that may receive dispensed digital information such as sound files include a portable computer such as a notebook computer, a personal digital assistant (PDA) and a mobile phone.

In alternative embodiments the present invention may be operative to dispense digital information to a user through the Internet by e-mail or FTP for example. In such embodiments the user may select the information through inputs to the ATM 10. The ATM would prompt the user to input through at least one input device an e-mail, FTP or other network delivery address. The ATM would then be operative through an output device such as a suitable network interface, to e-mail or FTP the selected digital information to the user, rather than dispensing the digital information through output devices, to a portable storage medium or to a computing device adjacent the ATM. Alternatively the ATM may send one or more messages through one or more networks to a remote computer, which messages cause the remote computer to send the selected digital content to the network address.

Figure 3 shows a schematic view representative of accounts that are accessed by the exemplary ATM 10 for distributing user fees. Because the ATM 10 is in operative connection with a host banking system, ATM 10 is enabled to deduct a user fee from an account of the user in exchange for the dispense of digital information. The exemplary embodiment of the ATM 10 operates by reading an account number from a card inserted by a user into the

card reader 20. The account number includes data representative of the institution where the user's account is held. Examples of cards that are operative for use with some embodiments of the present invention include credit cards, bank cards, debit cards, merchant cards, smart cards, or any other portable medium that can store account or user information and/or data representative of stored value. The exemplary ATM 10 is operative to communicate with a financial transaction computer which includes or which can communicate with, a host banking system which can validate a user inputted PIN and authorize a transaction requested by the user at the ATM. If the PIN is valid and the transaction authorized, the message(s) sent by ATM 10 is further operative to cause the host banking system to debit user fees from the user's account corresponding to the requested dispense of cash and/or the requested dispense of digital information. Transaction fees or other charges for the convenience of using the machine may also be charged to the user's account. Alternatively as previously discussed, embodiments of the present invention may identify users by biometric information. The biometric data from the user may then be used by a local or remote computer to identify the user and/or their associated account information.

The dispensing of most digital information is limited by the copyright owner. Typically the copyright owner requires a fee or royalty to copy, display, publicly perform or otherwise deliver the work. The amount of the fee may vary depending on how the work is authorized to be used. For example if the work is a sound recording, the fee to play the sound file one time in a restaurant may be much less than the fee to dispense the sound file to a portable storage medium which may be duplicated an unlimited number of times. Consequently, an exemplary embodiment of the present invention is operative to track how digital information is dispensed and to transfer corresponding licensing fees to a licensing entity, a digital information source and/or other entities authorized to receive payment. Likewise stored information concerning the nature, location, size, contract status or other

information concerning the establishment in which the particular ATM is located may be used to determine the fee. For example the fee to play a music file in a small restaurant may be less than in a large dance club. Similar principles may be applied to charging for other types of audio files,  
5 documents, images, videos, audiovisual files and pay-per-view type events.

The exemplary ATM 10 may be operative to debit a user fee from the user's account 50 for each dispense of digital information. The user fees may be transferred to a common banking account 54 of the operator of the ATM 10. Transfers of user fees may occur either immediately with each dispense  
10 and/or may occur periodically with the ATM 10 transferring data concerning multiple charges made to credit cards of various users to a financial transaction computer, such as a settlement host for example, which is operative to credit and debit accounts of the appropriate entities.

Licensing fees for downloading digital information from a digital  
15 information source may be transferred in a similar manner. The ATM 10 may generate messages or may include data in messages operative to cause a financial transaction computer to transfer a licensing fee from the account 54 that corresponds to the operator of the ATM 10, to an account of the digital information source 32. Such a transfer may be performed through the host  
20 banking system or through another transaction switch or through interaction of one or more financial transaction computers. Such transfers may occur with each download or may occur periodically for a batch of downloads which have occurred during a prior time period.

In an alternative embodiment, the ATM 10 is configured with inputs  
25 which include a terminal identifying UserID and a password for use when connecting through one or more networks to the digital information source 32. The UserID and password enable the ATM 10 to access the digital information source 32 and to download digital information. The digital information source 32 monitors all downloads that correspond to the UserID and periodically  
30 charges the account 54 that corresponds to the operator of the ATM.

Alternatively for some types of digital information, the charge may be assessed against an account of the establishment where the ATM is located or an account of the operator of the establishment. This may be appropriate in cases where the use associated with the digital information, as indicated by the  
5 transaction messages received from the ATM and/or based on stored data, is a public display or performance of the work in the establishment. Of course other approaches may be used.

Once digital information has been downloaded to the data store 13 of the ATM 10, the copyright owner of the digital information may require that a  
10 licensing fee be paid with each dispense of the digital information to a user or upon each public display or performance. The ATM 10 or other connected computer is operative to keep records of each dispense of digital content and the character of dispense that is made. The exemplary ATM is further operative to transfer licensing fees associated with each dispense to an account  
15 of the digital information source 32 or another licensing entity 52 through the financial transaction computer. This transfer may be done with each dispense or periodically for a batch of dispenses.

In an alternative embodiment, the ATM 10 may be operative to transfer dispense records to the digital information source or the licensing entity  
20 through the Internet or other network. The digital information source 32 or licensing entity 52 may then debit or charge the licensing fees from an account that corresponds to the user, the operator of the ATM, the operator of the establishment or other appropriate entity.

For digital information that includes copy protection features or other  
25 technological measure to limit reproduction, access or use of the copyrighted work, the ATM 10 may be further operative to configure or incorporate the protection features and charge a user fee that corresponds to the copy or other protection features which are included. For example ATM 10 may be enabled to have the user select licensing features of a song file such as unlimited or  
30 restricted duplication, expiration dates, or other features of the sound file that

affect the reproduction or use of the sound file. For example, the protection features used in some embodiments of the invention may restrict reproduction of the digital content so that it may only be played in the portable computing device to which it is initially delivered. Other features may restrict reproduction by preventing the digital content from being transferred from or otherwise reproduced in digital form from the media or device on which it is initially delivered. Other features may restrict reproduction by limiting the use of the digital content to a particular time period or to a particular number of plays. Of course additional or alternative approaches may be used depending on the system and the digital content involved. The ATM 10 may be operative to charge the user a corresponding user fee based on the type of protection features selected. The ATM may also be operative to cause the corresponding licensing or other fee to be paid to the source of the digital information or a licensing entity.

Alternative embodiments of the present invention may be used in connection with systems which include stored information concerning particular users. Such systems may be used to correlate the identity of the user with marketing or customer preference data. Such information may include particular categories of music, videos, books or other materials or products that can be provided and/or that are of interest to the particular user. The ATM may operate to automatically give the user options for selections tailored to their associated preference information. Alternatively such information may be used to automatically provide the user with digital files, visual or audio outputs or other outputs whenever the user operates an ATM connected to the system. For example when the ATM is operated as a jukebox, the ATM may operate to automatically display indicia corresponding to favorite artists or songs, or to output one or more of the user's favorite songs.

In certain embodiments of the invention it may not be desirable for a user to access their financial account each time a relatively small charge for digital information is assessed to the user. In such systems the system may be

configured so that the user is required to make a "minimum purchase." This amount may be a charge reasonably sufficient to offset the costs of accessing the account, for example \$10 or \$20. This amount would then be credited to a content prepay account associated with the user. A prepay account record  
5 indicating a credit associated with the user or their account would then be stored in one or more data stores. This credit information may be stored locally on a smart card or other item, at the ATM or remotely in a computer such as a financial transaction computer which can be accessed from the ATM. For example in some embodiments the amount may be credited to a  
10 licensing or other organization. Alternatively, a financial transaction computer may debit the prepay account of the user as it is used and route payments to the appropriate entities. The amount of value associated with the prepay account may then be reduced each time the user receives a delivery of digital content until the account is exhausted. Such a system may be advantageously used  
15 where the fees involved in each digital file transaction are small, such as the cost of playing sound files. Such a system also provides the system operator, licensing entity, or other entity the benefit of the "float" on the allocated funds.

To discourage or limit the unauthorized reproduction of digital information that may be dispensed, exemplary embodiments of the present  
20 invention may be operatively programmed to modify features of the digital information before it is delivered for reproduction on a portable medium and computing device. For example with digital sound files, the processor in the ATM comprises a reproduction device that may embed a digital code or certificate in the sound file that is reproduced on the user's portable digital  
25 sound player or other personal computing device. Such a certificate may further include an encrypted digital signature that can be used to detect unauthorized alterations of the file.

The portable sound player would only be operative to play the sound file if the digital certificate corresponds to a unique code or certificate

associated with the portable sound player. Also the portable sound player would only be operative to play the sound file if the digital signature indicates that the sound file is authentic. Such features would limit playback of the file to the user's personal sound player. The sound file would be inoperative on  
5 another personal sound playing device that is associated with a different certificate or code. Of course the same principles may be used with files that are downloaded to the ATM itself for storage in the local data store, when the files are only to be played through use of the ATM and not transferred to other devices.

10 In alternative embodiments the ATM may be operatively programmed to have the user register with a licensing entity for the digital content prior to dispensing digital content for the first time. During the registration process the user would be associated with a unique license code that may also be used when purchasing digital content in the future. The ATM may then be  
15 operative to embed the license code in each file that is dispensed for the user. The next time the user wishes to purchase digital information, the ATM may then be operatively programmed to accept the input of the license code from the user.

For example the license code may be manually input with the input  
20 device 16, read from a card with the card reader device 24, downloaded from the user's portable computing device 38, retrieved from another source and/or correlated with other data concerning the user. The ATM would then be operative to validate the license code by communicating with the licensing entity. If the license code is valid and/or is in good standing, the ATM would  
25 be operative to dispense additional digital information with the embedded license code of the user. Such a unique license code may be generated by the licensing organization, or may correspond to the previously described digital code or certificate associated with the user's computing device.

These described methods of copy and/or use protection of the  
30 dispensed digital information may be further associated with a subscription

service or club. For example during the previously described registration process the ATM may prompt the user to sign up for a digital information service that for a monthly fee enables the user to dispense a certain amount and/or type of digital information. For example the service may correspond to  
5 the dispensing of music files or digital book text files. Each month the user would be entitled to dispense a certain amount of these files from the ATM for a discount club rate fee or for no additional fee per dispense transaction.

When the user first signs up for the service, the ATM may be further operative to enable the user to associate payment of the service or club fees to  
10 an account of the user for automatic debit of the monthly club dues or dispense fees from the user's account. Such automatic payment information may be acquired by reading account information from a user's credit card or banking card with the card reader device 20 of the ATM.

In an alternative exemplary embodiment, the present invention may be  
15 used to retrieve digital information previously associated with a user from a processor of the digital information. For example the exemplary ATM may be in operative connection with a photographic film processor. The user may for example input with an input device 16 of the ATM a processing number, code or other identification value associated with photographic film being  
20 developed and digitally scanned by the film processor. The exemplary ATM is operative to download digital images of the user's developed film from the processor which corresponds to the inputted processing number. The ATM is further operative to display the images and enable the user to select one or more of the images for printing to the printing system 64. The ATM may  
25 further enable the user to dispense the images to a physical medium and/or portable computing device of the user as previously described.

Exemplary embodiments of this described embodiment of the ATM may further enable the user to crop, zoom, and/or perform other imaging processing manipulations on the images prior to printing or dispensing. The  
30 exemplary ATM is operative to charge fees to an account of a user or accept



cash from the user for the services of printing and/or dispensing the images. A portion of the fees may further be transferred by the ATM to the film processor.

5 In a further alternative exemplary embodiment, the ATM may accept the upload of digital images or other digital content from a portable storage medium, digital camera, or other device of the user. The exemplary ATM may then enable the user to selectively print, for a fee, individual images or other uploaded digital content with the printing system of the ATM.

10 The processor in ATM 10 operates to perform processes described herein responsive to software stored in one or more data stores, such as data store 13. The software stored in data store 13 is loaded therein from one or more forms of programming media. Such programming media may include any media from which computer instructions can be copied such as one or more CDs, diskettes, hard drives, tapes or other items.

15 The present invention may find applicability to numerous types of situations and may be used to facilitate the tracking of transactions in the entertainment, education, gaming, investment, merchandising and banking industries.

20 Thus the system and method for dispensing digital information of the present invention achieves at least one of the above stated objectives, eliminates difficulties encountered in the use of prior devices and systems, solves problems and attains the desirable results described herein.

25 In the foregoing description certain terms have been used for brevity, clarity and understanding, however no unnecessary limitations are to be implied therefrom because such terms are used for descriptive purposes and are intended to be broadly construed. Moreover, the descriptions and illustrations herein are by way of examples and the invention is not limited to the exact details shown and described.

30 In the following claims any feature described as a means for performing a function will be construed as encompassing any means known to

those skilled in the art to be capable of performing the recited function, and will not be limited to the structures shown herein or mere equivalents thereof.

5        Having described the features, discoveries and principles of the invention, the manner in which it is constructed and operated, and the advantages and useful results attained; the new and useful structures, devices, elements, arrangements, parts, combinations, systems, equipment, operations, methods and relationships are set forth in the appended claims.

CLAIMS

We claim:

1. An automated transaction machine apparatus comprising:  
  
at least one computer processor;  
  
5 at least one data store in operative connection with the computer processor, wherein the computer processor is operative to cause a plurality of digital information files to be retrieved from at least one digital information source located remotely from the machine and saved in the data store;  
  
10 at least one input device in operative connection with the computer processor;  
  
a cash dispenser device in operative connection with the computer processor, wherein the computer processor is operative to cause the cash dispenser to dispense currency  
15 responsive to at least one first input through the at least one input device; and  
  
at least one output device in operative connection with the computer processor, wherein the computer processor is operative to cause the dispense of at least one of the digital  
20 information files through the at least one output device responsive to at least one second input through the at least one input device that corresponds to the at least one digital information file.

2. The apparatus according to claim 1 wherein the at least one input device comprises a card reader device in operative connection with the computer processor, wherein the card reader device is operative to read account indicia from a card, and wherein the computer processor is operative to cause one or more fees to be charged to the account corresponding to the dispense of currency and the dispense of the at least one digital information file.

3. The apparatus according to claim 1, wherein the at least one digital information file includes a digital sound recording file.

4. The apparatus according to claim 3, wherein the at least one digital information file includes an MP3 file.

5. The apparatus according to claim 3, wherein the at least one output device includes a sound system, and wherein the computer processor is operative to cause the output of sound through the sound system responsive to the at least one digital information file.

6. The apparatus according to claim 1, wherein the computer processor is operative to cause a licensing fee associated with the at least one digital information file, to be transferred to a licensing entity.

7. Apparatus comprising:

an automated transaction machine including:

at least one input device;

27

a cash dispenser, wherein the cash dispenser delivers cash from the machine responsive to inputs to the at least one input device;

5                   at least one output device, wherein the at least one output device is operative to cause the delivery of digital content responsive to inputs to the at least one input device.

8.           The apparatus according to claim 7 wherein the at least one output device is releasibly operatively connectable to a portable computing  
10           device.

9.           The apparatus according to claim 8 wherein the at least one output device comprises a communications port releasibly operatively connectable to a portable computing device adjacent the machine.

10.          The apparatus according to claim 9 wherein the digital content  
15           comprises at least one sound file.

11.          The apparatus according to claim 10 wherein the at least one sound file comprises a music file.

12.          The apparatus according to claim 9 wherein the digital content comprises at least one audiovisual file.

20           13.          The apparatus according to claim 7 wherein the at least one input device is adapted to receive at least one input corresponding to an account, and wherein the machine further includes:

5           at least one processor, wherein the processor is in operative connection with the at least one input device, the cash dispenser and the at least one output device, and wherein the processor is operative to cause the account to be charged for at least one of delivered cash and digital content.

14.       The apparatus according to claim 13 wherein the at least one input device includes a card reader, and wherein the input corresponding to an account is produced responsive to at least one card read by the card reader.

10       15.       The apparatus according to claim 13 wherein the processor is operative to cause content indicia corresponding to a plurality of portions of the digital content to be output through the at least one output device, and wherein the processor is operative to cause a selected portion of the digital content to be delivered responsive to at least one selection input corresponding to the selected portion, through the at least one input device.

15       16.       The apparatus according to claim 15 wherein the machine includes a display device and the content indicia is output through the display device.

20       17.       The apparatus according to claim 16 wherein the content indicia includes a graphic image corresponding to at least one of the portions of the digital content.

18.       The apparatus according to claim 13 wherein the apparatus comprises at least one content data store, wherein the digital content is delivered from the content data store.

19. The apparatus according to claim 18 wherein the content data store comprises a local content data store located in the machine.

20. The apparatus according to claim 18 and further comprising:

at least one network in operative connection with the machine;  
and

at least one remote computer in operative connection with the network, wherein the content data store is in the at least one remote computer.

21. The apparatus according to claim 20 and further comprising:

at least one financial transaction computer in operative connection with the at least one network, wherein the processor is operative to cause the account to be charged through communication with the at least one financial transaction computer through the at least one network.

22. The apparatus according to claim 18 wherein the at least one input device on the machine is operative to receive a network delivery address, and further comprising:

at least one network in operative connection with the machine, wherein the processor is operative to cause the digital content to be delivered through the at least one network to the network delivery address, whereby a remote computer corresponding to the network delivery address is enabled to receive the digital content.

30.

23. The apparatus according to claim 19 and further comprising:
- at least one network in operative connection with the machine;  
and
- at least one remote computer in operative connection with the  
network, wherein the at least one remote computer includes at  
least one remote content data store.
24. The apparatus according to claim 23, wherein the machine is  
operative to selectively deliver digital content from either the local content  
data store or the remote content data store responsive to at least one input to  
the at least one input device.
25. The apparatus according to claim 23 wherein the processor is  
operative to cause digital content in the remote content data store to be stored  
in the local content data store.
26. The apparatus according to claim 25 wherein the processor is  
operative on a periodic basis to cause selected digital content in the remote  
content data store to be stored in the local data store.
27. The apparatus according to claim 26 wherein the selected  
digital content comprises at least one sound file corresponding to at least one  
currently popular song.
28. The apparatus according to claim 26 wherein the selected  
digital content comprises at least one sound file corresponding to at least one  
currently popular book.



31

29. The apparatus according to claim 26 wherein the selected digital content comprises at least one audiovisual file corresponding to at least one currently popular movie.

5 30. The apparatus according to claim 27 wherein the selected digital content includes at least one graphic image corresponding to the at least one song.

31. The apparatus according to claim 13 and further comprising:  
  
at least one network in operative connection with the machine,  
  
at least one financial transaction computer in operative  
10 connection with the network, wherein the processor is operative to cause the account to be charged responsive to communication through the at least one network with the at least one financial transaction computer.

15 32. The apparatus according to claim 31 wherein the at least one financial transaction computer includes a source account associated with a source of the digital content, and wherein the source account is credited responsive to delivery of the digital content.

20 33. The apparatus according to claim 31 wherein the at least one financial transaction computer includes a licensing account associated with a licensing entity for the digital content, and wherein the licensing account is credited responsive to the delivery of the digital content.

34. The apparatus according to claim 31 wherein the account is associated with a user of the machine, and wherein the at least one financial

transaction computer includes the account, and wherein the account is debited responsive to either delivery of cash or delivery of digital content.

5           35.     The apparatus according to claim 31 wherein the at least one financial transaction computer holds a content prepay account for delivery of digital content, and wherein the processor is operative responsive to at least one input to at least one input device to cause funds to be transferred from the account to the content prepay account, and wherein the processor is operative to cause the content prepay account to be debited responsive to the delivery of the digital content.

10           36.     The apparatus according to claim 31 wherein the output device includes a reproduction device operative to reproduce the digital content on a portable storage medium.

15           37.     The apparatus according to claim 36 wherein the reproduction device is operative to cause the digital content to be reproduced in a portable computing device releasibly operatively connectable with the machine.

            38.     The apparatus according to claim 37 wherein the digital content is reproduced in the portable computing device such that it can only be played in the portable computing device.

20           39.     The apparatus according to claim 37 wherein the digital content is reproduced in the portable computing device such that it cannot be further transferred in digital form from the portable computing device.

            40.     The apparatus according to claim 37 wherein the digital content is reproduced in the portable computing device such that it can only be played a limited number of times.

41. The apparatus according to claim 37 wherein the digital content is reproduced in the portable computing device such that it can only be played during a limited time period.

5 42. The apparatus according to claim 36 wherein the machine includes a supply of portable media, and the reproduction device is operative to reproduce the digital content on the portable storage media from the supply.

43. The apparatus according to claim 8 wherein the digital content is reproduced in the portable computing device such that reproduction of the digital content is restricted.

10 44. The apparatus according to claim 7 wherein the machine further comprises a supply of portable storage media, and wherein the digital content is delivered by being reproduced on portable storage media from the supply.

15 45. The apparatus according to claim 31 wherein the at least one output device includes a sound system, and wherein the digital content is delivered through audio outputs through the sound system.

46. The apparatus according to claim 7 wherein the at least one output device includes a sound system, and wherein the digital content is delivered through audio outputs through the sound system.

20 47. The apparatus according to claim according to claim 31 wherein the at least one output device includes an audiovisual output device, and wherein the digital content is delivered as audiovisual outputs through the audiovisual output device.

48. The apparatus according to claim according to claim 7 wherein the at least one output device includes an audiovisual output device, and wherein the digital content is delivered as audiovisual outputs through the audiovisual output device.

5           49. The apparatus according to claim according to claim 31 wherein the at least one output device includes a printer device, and wherein the digital content is delivered by printing the digital content with the printer device.

10           50. The apparatus according to claim according to claim 7 wherein the at least one output device includes a printer device, and wherein the digital content is delivered by printing the digital content with the printer device.

51. The apparatus according to claim 46 wherein the machine is located in an establishment, and wherein the account charged for the delivered digital content is an account of an operator of the establishment.

15           52. The apparatus according to claim 48 wherein the machine is located in an establishment, and wherein the account charged for the delivered digital content is an account of an operator of the establishment.

53. The apparatus according to claim 7 wherein the automated transaction machine further comprises:

20           a currency acceptor, wherein the machine is further operative to deliver digital content responsive to deposit of cash into the currency acceptor.

54. The apparatus according to claim 47 wherein the automated transaction machine further comprises:

a currency acceptor, wherein the machine is further operative to deliver digital content responsive to deposit of cash into the currency acceptor.

5

55. A method comprising:

(a) providing at least one account identifying input to the at least one input device of the automated transaction machine of claim 7;

10

(b) providing at least one dispense input to the at least one input device of the machine;

(c) dispensing either cash from the machine or digital content responsive to the at least one dispense input.

56. The method according to claim 55 and further comprising:

15

(d) charging an amount for the dispense of cash or digital content, to an account associated with the at least one account identifying input.

20

57. The method according to claim 56 wherein step (a) comprises reading the account identifying indicia from a card with a card reader on the machine, and wherein step (d) comprises communicating with a financial transaction computer remotely located from the machine.

58. The method according to claim 55 wherein step (c) includes recording the dispensed digital content with a portable computing device.

5 59. The method according to claim 58 wherein step (c) includes placing the portable computing device in releasible operative connection with an output device on the machine.

60. The method according to claim 58 wherein in step (c) the recording is conducted such that reproduction from the portable computing device is restricted.

10 61. The method according to claim 55 wherein the digital content comprises a sound file.

62. The method according to claim 61 wherein the digital content comprises a music file.

15 63. The method according to claim 61 wherein the digital content comprises a document file.

64. The method according to claim 61 wherein the digital content comprises an image file.

65. The method according to claim 55 wherein the digital content comprises an audiovisual file.

20 66. The method according to claim 55 wherein in step (c) the dispense of digital content comprises sending the digital content through at least one network to a network delivery address.

67. The method according to claim 55 and further comprising:
- (d) crediting a source account associated with a source of the digital content responsive to the dispense of digital content in step (c).
- 5 68. The method according to claim 55 and further comprising:
- (d) crediting a licensing account associated with a licensing entity of the digital content responsive to the dispense of digital content in step (c).
69. The method according to claim 55 and further comprising:
- 10 (d) debiting an amount from an account associated with the account identifying input; and
  - (e) crediting the amount to a prepay account;
  - (f) debiting the prepay account responsive to the dispense of digital content in step (c).
- 15 70. The method according to claim 55 wherein in step (c) the dispense of digital content includes delivering sounds through a sound system.
71. The method according to claim 55 wherein in step (c) the dispensing of digital content includes delivering audiovisual material through an audiovisual system.

72. The method according to claim 55 wherein in step (c) the dispense of digital content includes printing digital content with a printer.

73. The method according to claim 70 wherein the machine is located in an establishment, and further comprising:

5 (d) charging an account associated with the establishment responsive to the dispense of digital content.

74. The method according to claim 55 and further comprising:

10 d) reproducing in a local content data store in the machine, digital content from at least one remote content data store accessed through at least one network by the machine.

75. The method according to claim 74 wherein in step (c) the digital content is delivered from the local content data store.

15 76. The method according to claim 74 wherein in step (c) the digital content is delivered from either the local content data store or the remote content data store.

77. The method according to claim 55 wherein in step (a) the account identifying input comprises a biometric input from a user of the machine.

20 78. The method according to claim 55 wherein step (c) comprises reproducing the digital content on a portable media.



79. The method according to claim 78 wherein in step (c) the portable media is from a supply of portable media in the machine.

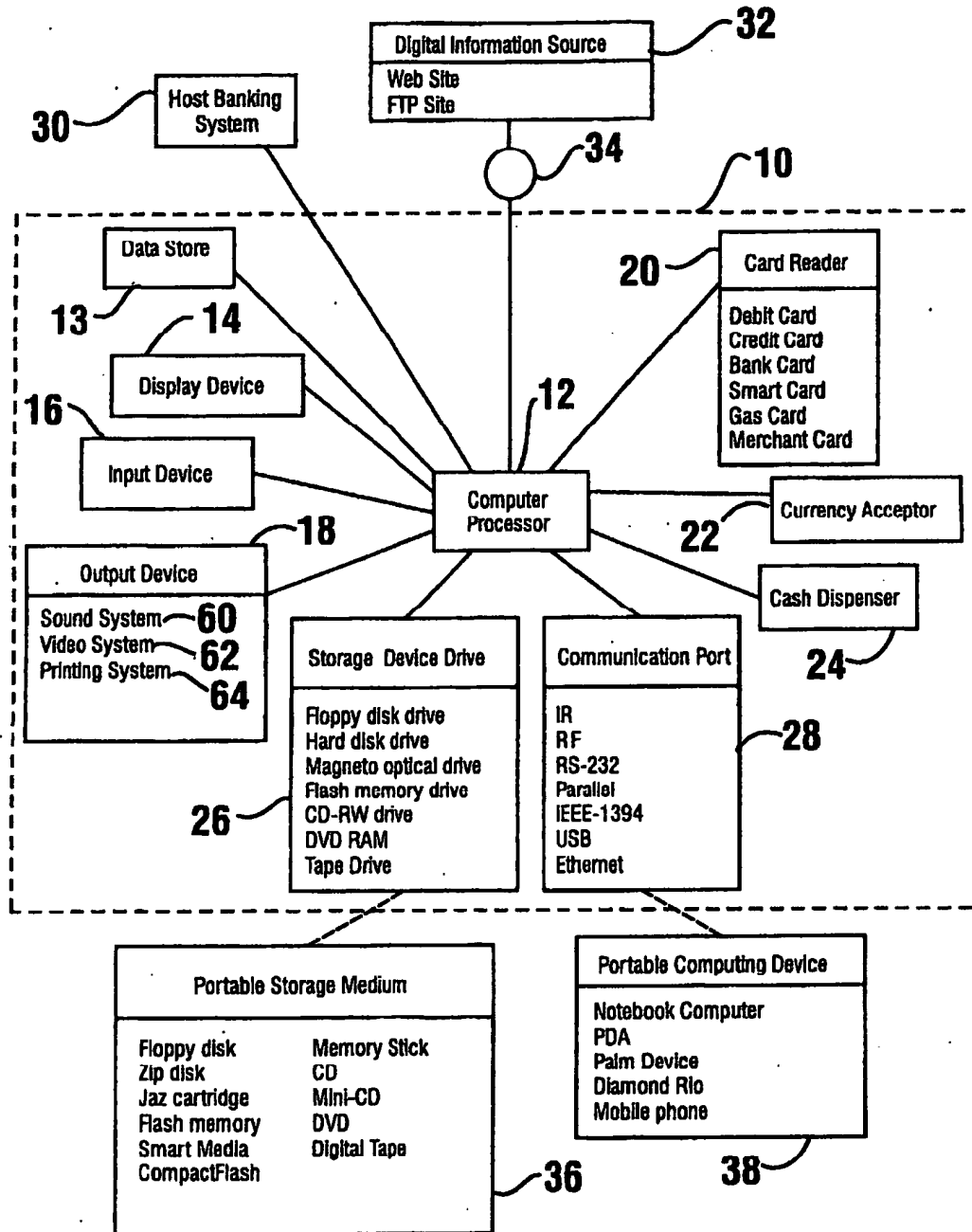
80. The method according to claim 55 wherein in step (c) the portable media is supplied by a user of the machine.

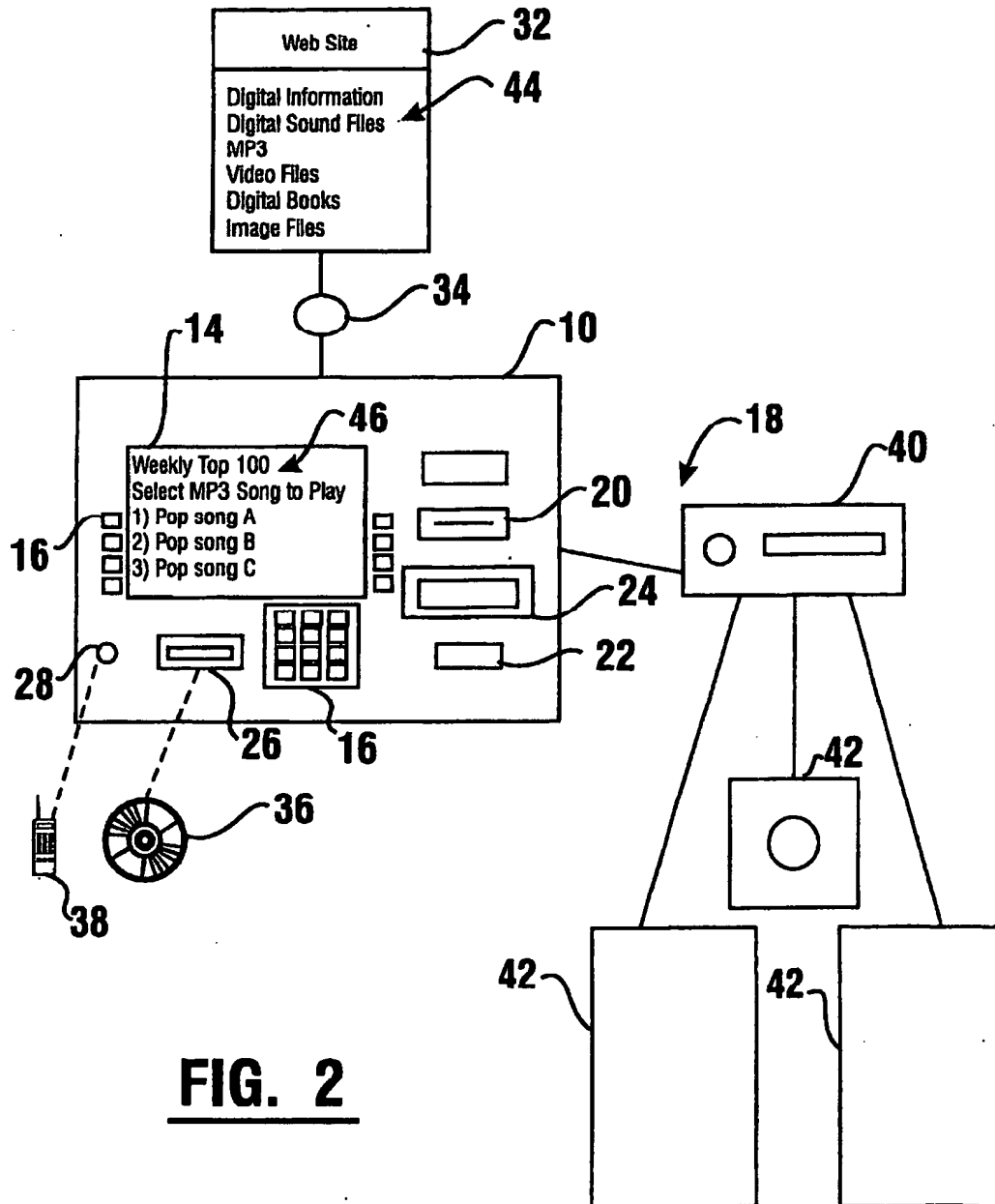
5 81. The method according to claim 55 and further comprising:

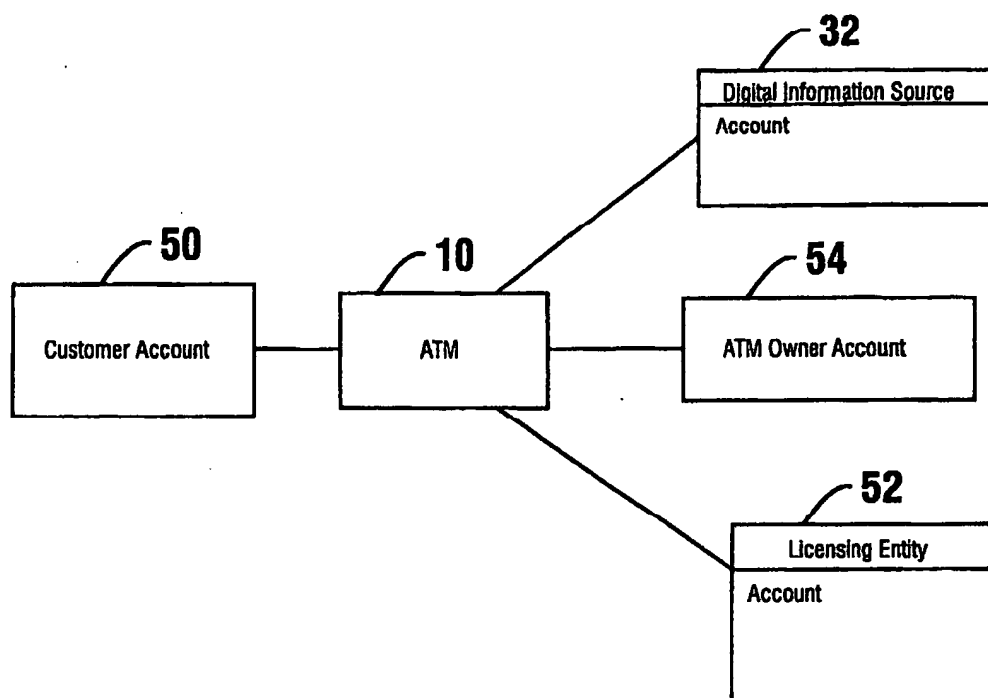
(d) receiving currency with a currency acceptor on the machine; and

(e) dispensing digital content responsive to the receipt of currency in step (d).

10 82. Computer readable media operative to cause at least one processor in the automated transaction machine to carry out step (c) recited in claim 55, responsive to performance of steps (a) and (b).





**FIG. 3**